Job Risk Analysis

Name(s) of Risk Team Members: J. Scott, J. Scaduto, C. Pearson, J. White, S. Pontieri, L. Arnold, F. Karl	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Construction/Demolition at C-AD Job Number or Job Identifier: FRA 29-05	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Demolition of Experimental Beam Lines C&B, and Construction of	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): Rad 1 Training, C-A Access Training, Cont. Worker Training Approved by: *E. Lessard* Date: 6-16-05 Rev. #: 0	Likelihood (D)	Highly Unlikely	Unlikely	Possible	Probable	Multiple

Stressors (if applicable, please list all) Lighting, Heat, radiation	Reason for Revision (if applicable): New FRA	Comments:

				Before Additional Controls							After Additional Controls						
Job Step / Task	Hazard	Control(s)	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	Control(s) Added to Reduce Risk	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	% Risk Reduction
Liaison Engineer Field Work Planning	Radiation, contamination	See FRA-3-05														
Liaison Engineer Field Work Planning	Exposure to energized systems	LOTO, Training, NFP70E PPE requirements, coordination with shops, procedures, drawings, safety awareness, experience. Electricians as required, FRA 1-05	Y	1	2	5	2	20	See Notes 1-4 below	Y	1	2	5	1	10	50%
Liaison Engineer Field Work Planning	Slips, trips, falls	Proper footwear, worker awareness, housekeeping, road and building maintenance upkeep and snow removal, FRA 5-05	Y	1	2	4	3	24								
Liaison Engineer Field Work Planning	Falls from elevated locations	Ladder safety training, fall protection training, scaffolding or manlifts as required, protected walkways, postings, experience, spotter if required	Y	1	2	5	3	30	FES fall protection plan and guidance	Y	1	2	5	2	20	33%
Liaison Engineer Field Work Planning	Hazardous materials(chemicals, lead, animal droppings etc.)	Training, key plans, experience in area, postings, RWP, building and area maintenance, PE cleanup of animal droppings. See JRA 16-05, FRA 17-05	Y	1	2	3	3	18								
Liaison Engineer Field Work Planning	Pressurized, Vacuum systems	JRA 9-05, JRA 10-05														
Plant Engineering Field Work	Same as all above	F&O JRA-EP-Construct-01														

Draining And Venting Pressurized And Vacuum Systems	See JRA 9-05, JRA 10-05	Experienced water systems and Vacuum systems, and FES personnel, PPE, Procedures, training, HP coverage, JRA 8-05, JRA 9-05.															
Work In High Radiation, And Radiation Areas	See FRA 3-05, FRA 17-05,FRA 24-05	See FRA 3-05, FRA 17-05,FRA 24-05															
Rigging	Falling objects	See FRA 7-05, JRA 2-05, JRA 3-05, JRA 19-05, JRA 20-05															
Cable Pulling	See JRA 12-05	See JRA 12-05															
Exposure To Energized Circuits	See FRA 1-05, JRA 4-05, JRA 5-05, JRA 6-05.	See FRA 1-05, JRA 4-05, JRA 5-05, JRA 6-05															
Mechanical Machinery And Cutting Tools	Flying objects, chips, and splints	See FRA 10-04, JRA 24-05, JRA 26-05															
Waste Handling And Transportation	See FRA 7-04, FRA 22-05,FRA 23-05,JRA 1-05,JRA 15-05, JRA 16-05	See FRA 7-04, FRA 22-05,FRA 23-05,JRA 1-05,JRA 15-05, JRA 16-05															
Welding, Welding Helper	Burns, fire	See JRA 21-05, FRA 2-05															
Shielding Removal Or Installation	Radiation	Radiation Safety Committee review, Liaison Physicist approval for changes or additions, posted warnings	Y	2	2	4	2	32									
Excavation	See F&O FRA-EP-GEN-CONSTRUCTION	See F&O FRA-EP-GEN-COSTRUCTION															
Demolition	See F&O FRA-EP-GEN-CONSTRUCTION	See F&O FRA-EP-GEN-CONSTRUCTION															
Jack Hammering, Concrete Work	See F&O FRA-EP-GEN-CONSTRUCTION	See F&O FRA-EP-GEN-CONSTRUCTION															
Heavy Equipment	See F&O FRA-EP-GEN-CONSTRUCTION	See F&O FRA-EP-GEN-CONSTRUCTION															
Temporary Electrical Generators And Extension Cords	See F&O FRA-EP-GEN-CONSTRUCTION	See F&O FRA-EP-GEN-CONSTRUCTION															

Further Description of Controls Added to Reduce Risk: NOTE 1: OSHA Teams visited C-AD during the period October 20 through October 31, 2003 and recorded electrical non-compliances. All OSHA findings will be closed by 2006 by full compliance or with an equivalent level of safety.. The status of the OSHA items are maintained in BNL's Compliance suite, and closed on a schedule commensurate with funding. NOTE 2: A compliance plan to have all electrical installations accepted by an Authority Having Jurisdiction (AHJ), as per 29CFR1910 Subpart S, has been implemented by BNL. UL, CSA, LLC or other NRTL accepted equipment will be acquired at BNL for all future installations. Prior installations shall be reviewed and accepted by qualified AHJs. The plan must be completed by 2009. NOTE 3: Full compliance with NFPA 70E was adopted by the C-AD in December 2005. NFPA 70E prescribes protective clothing to protect against shock and arc blast; thus reducing the severity and likelihood of an injury. It also prescribes training, which is currently fulfilled by taking the 2005 version of Electrical Safety 1 and by attending the C-AD 3-hour classroom course on electrical safety rules and PPE. NOTE 4: Contractor and vendor training in work planning and electrical safety has been improved. Plans to reach all contractors and vendors with regard to NFPA 70E requirements prior to performing work at BNL have been implemented. C-AD has obtained lists of all its vendors and suppliers and is ensuring that they take Electrical Safety 1 or have equivalent training if needed.

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable